CLAIMS

We claim:

1. A circuit comprising:

a plurality of microbolometers forming a microbolometer array, wherein contacts within the microbolometer array are shared among the microbolometers;

means for selecting from among the microbolometers in the microbolometer array and providing a corresponding output signal; and

means for providing temperature compensation for the output signal.

2. The circuit of Claim 1, wherein the contacts are shared between adjacent ones of the microbolometers in a column and the contacts are shared between the microbolometers in different columns in the microbolometer array.

3. The circuit of Claim 1, wherein the plurality of switches comprise a first set of switches adapted to apply a reference voltage to corresponding ones of the plurality of microbolometers and a second set of switches adapted to route the output signal from corresponding ones of the plurality of microbolometers.

4. The circuit of Claim 3, wherein the first set of switches are initially asserted and the second set of switches initially deasserted, with the first set of switches sequentially deasserted as corresponding ones of the second set of switches coupled to the same contacts are sequentially asserted until all of the second set of switches are asserted.

5. The circuit of Claim 3, wherein one of the first set of switches is asserted for every two of the second set of switches to provide the output signal for two of the microbolometers in corresponding columns.

6. The circuit of Claim 1, wherein the means for providing temperature compensation comprises at least one resistor associated with the plurality of microbolometers, the at least one resistor adapted to be calibrated to provide temperature coefficient of resistance compensation for the microbolometers.

7. The circuit of Claim 6, wherein the means for providing temperature compensation further comprises at least one bias circuit adapted to provide a bias for the plurality of microbolometers.

8. The circuit of Claim 7, wherein the bias circuit comprises a load microbolometer.

9. The circuit of Claim 8, wherein the bias circuit further comprises a resistor adapted to provide temperature coefficient of resistance compensation for the load microbolometer.

10. The circuit of Claim 6, wherein the means for providing temperature compensation further comprises at least one reference path associated with at least one of the plurality of microbolometers, the reference path adapted to provide a reference voltage.

11. The circuit of Claim 1, further comprising a data processor adapted to provide uniformity-correction data for the plurality of microbolometers and to control non-uniformity corrections of the output signals.

12. The circuit of Claim 11, wherein the uniformity-correction data comprises trim resistance values and offset values for the plurality of microbolometers.

13. The circuit of Claim 12, wherein the uniformity-correction data further comprises fine offset values and gain calibration values.

14. The circuit of Claim 12, wherein the uniformity-correction data further comprises at least one external resistor value and additional fine offset values.

15. The circuit of Claim 1, wherein the means for providing temperature compensation comprises at least one current source associated with the plurality of microbolometers.

16. The circuit of Claim 15, wherein the means for providing temperature compensation further comprises at least one bias circuit adapted to provide a bias for the plurality of microbolometers.

17. The circuit of Claim 16, further comprising a data processor adapted to provide uniformity-correction data for the plurality of microbolometers and to control non-uniformity corrections of the output signals.

18. The circuit of Claim 17, wherein the uniformity-correction data comprises a current value for the current source and offset values for the plurality of microbolometers.

19. A method of providing calibrated output signals from a microbolometer focal plane array having shared contacts, the method comprising:

selecting at least one row of the microbolometer focal plane array to provide corresponding output signals from microbolometers in the row;

providing a trim resistor value to provide temperature compensation for at least one microbolometer in the row; and

providing an offset value to provide temperature compensation for at least one microbolometer in the row.

20. The method of Claim 19, wherein the shared contacts are shared between adjacent microbolometers in columns of the microbolometer focal plane array.

21. The method of Claim 19, wherein the shared contacts are shared between adjacent microbolometers in columns of the microbolometer focal plane array and between microbolometers in different columns of the microbolometer focal plane array.

22. The method of Claim 19, wherein the selecting comprises:

applying a reference voltage to the microbolometers in the row; and

providing a signal path from the microbolometers in the row.

23. The method of Claim 19, wherein the selecting comprises:

applying a reference voltage to the microbolometers in the microbolometer focal plane array; and

selecting sequentially each row of the microbolometer focal plane array to provide a signal path from the microbolometers in the row, wherein the reference voltage is removed from the previous row prior to selecting the next row through the shared contact.

24. The method of Claim 19, further comprising calibrating the microbolometer focal plane array to determine the trim resistor values and the offset values over a desired temperature range.

25. The method of Claim 19, further comprising providing a fine offset and a gain calibration to the output signals.

26. The method of Claim 25, further comprising providing an additional offset to the output signals.

27. A microbolometer focal plane array comprising:

a plurality of microbolometers forming a microbolometer array, wherein contacts within the microbolometer array are shared by the microbolometers;

a first plurality of switches adapted to provide a reference signal to respective ones of the plurality of microbolometers; and

a second plurality of switches adapted to receive an output signal from respective ones of the plurality of microbolometers, wherein the first and second plurality of switches are initially asserted and deasserted, respectively, with one of the switches from the first plurality deasserted prior to one of the switches from the second plurality being asserted which couple to the same contact, with this switching pattern repeated for the first and second plurality of switches until the second plurality of switches are all asserted.

28. The microbolometer focal plane array of Claim 27, wherein the contacts being shared are located between the microbolometers in a column.

29. The microbolometer focal plane array of Claim 27, further comprising:

a resistor adapted to provide temperature compensation for at least one of the microbolometers; and

a bias circuit, coupled to the resistor, adapted to provide an offset for at least one of the microbolometers.

30. The microbolometer focal plane array of Claim 29, further comprising a reference path for at least one of the microbolometers, the reference path adapted to provide a temperature compensated reference voltage.

31. The microbolometer focal plane array of Claim 29, wherein the microbolometer focal plane array is couplable to a processor adapted to provide uniformity-correction data for the microbolometer focal plane array.

32. The microbolometer focal plane array of Claim 31, wherein the uniformity-correction data comprises a resistance value for the resistor and an offset value for the offset.

33. The microbolometer focal plane array of Claim 31, wherein the processor controls non-uniformity corrections to the output signals.

34. The microbolometer focal plane array of Claim 33, wherein the non-uniformity corrections comprise at least one of a fine offset, a gain calibration, and an additional offset.

35. The microbolometer focal plane array of Claim 29, wherein the resistor and the bias circuit are adapted to be calibrated to provide temperature compensation for the microbolometers.

36. The microbolometer focal plane array of Claim 27, further comprising:

a current source adapted to provide temperature compensation for at least one of the microbolometers; and

a bias circuit, coupled to the current source, adapted to provide an offset for at least one of the microbolometers.

37. The microbolometer focal plane array of Claim 36, wherein the microbolometer focal plane array is couplable to a processor adapted to provide uniformity-correction data for the microbolometer focal plane array.